REMARKS

The Office Action dated April 13, 2010 and the Advisory Action dated June 7, 2010 have been carefully reviewed, and the foregoing amendment has been made in consequence thereof.

Claims 1-3, 5, 6, 15-17, 19, 20, 29-31, 33, and 34 are pending in this application. Claims 1-3, 5, 6, 15-17, 19, 20, 29-31, 33, and 34 stand rejected.

The rejection of Claims 1, 5, 6, 15, 19, 20, 29, 33, and 34 under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 6,449,330 to Li et al. (hereinafter referred to as "Li") in view of U.S. Patent No. 6,529,575 to Hsieh (hereinafter referred to as "Hsieh") and Germany Patent Reference No. 19853143 A1 to Kachelries et al. (hereinafter referred to as "Kachelries") is respectfully traversed.

Li describes a computed tomography (CT) imaging system (10) that includes an x-ray source (14), a detector array (18), and a data acquisition system (DAS) (32) that samples analog data from detector array (18) and converts the data to digital signals for subsequent processing. During a scan to acquire x-ray projection data, x-ray source (14) rotates about a center of rotation (24) to generate projection data. Notably, Li does not describe or suggest utilizing smoothing kernels and projections to produce projections smoothed in three dimensions in accordance with thresholds such that a first threshold of the set of thresholds triggers smoothing in three dimensions and a second threshold of the set of thresholds does not trigger smoothing in three dimensions.

Hsieh describes a system for reducing noise in an x-ray image. The system includes a gantry having an x-ray source and a radiation detector array. The gantry defines an object cavity, and the x-ray source and the radiation detector array are rotatingly associated with the gantry so as to be separated by the object cavity. The system also includes an object support structure movingly associated with the gantry so as to allow communication with the object cavity and a processing device having an adaptive projection filtering scheme. The filtering scheme generates system information, obtains original projection data, determines a data characteristic of the original projection

data, processes the original projection data responsive to the system information and the data characteristic so as to create filtered projection data, and calculates resulting projection data responsive to the filtered projection data. Notably, Hsieh does not describe or suggest utilizing smoothing kernels and projections to produce projections smoothed in three dimensions in accordance with thresholds such that a first threshold of the set of thresholds triggers smoothing in three dimensions and a second threshold of the set of thresholds does not trigger smoothing in three dimensions.

With respect to Kachelries, the Office has provided an electronic translation because Kachelries is not written in English. Again, Applicants respectfully submit that the electronic translation is not clear (i.e., has numerous errors) and that it is difficult for Applicants to ascertain the full scope of the teachings provided in Kachelries.

Claim 1 recites a method for reconstructing an image of an object in a computed tomographic imaging system. The method includes "scanning an object using a computed tomographic (CT) imaging apparatus to acquire projections of the object; determining, utilizing the projections, a set of thresholds; associating selected smoothing kernels with the thresholds; utilizing, via the computed tomographic imaging system, the smoothing kernels and the projections to produce projections smoothed in three dimensions in accordance with the thresholds such that a first threshold of the set of thresholds triggers smoothing in three dimensions and a second threshold of the set of thresholds does not trigger smoothing in three dimensions; and filtering and backprojecting the projections to generate an image of the object in the computed tomographic imaging system."

The electronic translation of Kachelries is unclear. No combination of Li and Hsieh describes or suggests a method for reconstructing an image of an object in a computed tomographic imaging system as is recited in Claim 1. Specifically, no combination of Li and Hsieh describes or suggests utilizing smoothing kernels and projections to produce projections smoothed in three dimensions in accordance with thresholds such that a first threshold of the set of thresholds triggers smoothing in three dimensions and a second threshold of the set of thresholds does not trigger smoothing in

three dimensions. Rather, in contrast to the presently claimed invention, Li merely describes an x-ray source that rotates about a center of rotation to generate projection data, and Hsieh merely describes a filtering scheme that generates system information, obtains original projection data, determines a data characteristic of the original projection data, processes the original projection data responsive to the system information and the data characteristic so as to create filtered projection data, and calculates resulting projection data responsive to the filtered projection data. Accordingly, Claim 1 is submitted as being patentable over Li, Hsieh, and Kachelries.

Claims 5 and 6 depend from independent Claim 1. When the recitations of Claims 5 and 6 are considered in combination with the recitations of Claim 1, Applicants submit that dependent Claims 5 and 6 likewise are patentable over Li, Hsieh, and Kachelries.

Claim 15 recites a CT imaging apparatus including "a detector; a source configured to project a beam of x-rays toward said detector; and a computer system operatively coupled to at least one of said detector and said source, said computer system comprising: a first module configured to scan an object to acquire projections of the object; a second module configured to determine, utilizing the projections, a set of thresholds; a third module configured to associate selected smoothing kernels with the thresholds; a fourth module configured to utilize the smoothing kernels and the projections to produce projections smoothed in three dimensions in accordance with the thresholds such that a first threshold of the set of thresholds triggers smoothing in three dimensions and a second threshold of the set of thresholds does not trigger smoothing in three dimensions; and a fifth module configured to filter and backproject the projections to generate an image of the object."

The electronic translation of Kachelries is unclear. No combination of Li and Hsieh describes or suggests a CT imaging apparatus as is recited in Claim 15. Specifically, no combination of Li and Hsieh describes or suggests utilizing smoothing kernels and projections to produce projections smoothed in three dimensions in accordance with thresholds such that a first threshold of the set of thresholds triggers

smoothing in three dimensions and a second threshold of the set of thresholds does not trigger smoothing in three dimensions. Rather, in contrast to the presently claimed invention, Li merely describes an x-ray source that rotates about a center of rotation to generate projection data, and Hsieh merely describes a filtering scheme that generates system information, obtains original projection data, determines a data characteristic of the original projection data, processes the original projection data responsive to the system information and the data characteristic so as to create filtered projection data, and calculates resulting projection data responsive to the filtered projection data. Accordingly, Claim 15 is submitted as being patentable over Li, Hsieh, and Kachelries.

Claims 19 and 20 depend from independent Claim 15. When the recitations of Claims 19 and 20 are considered in combination with the recitations of Claim 15, Applicants submit that dependent Claims 19 and 20 likewise are patentable over Li, Hsieh, and Kachelries.

Claim 29 recites a computer storage medium comprising instructions thereon, the instructions "configured to instruct a computer to: determine, utilizing projections obtained by scanning an object, a set of thresholds; associate selected smoothing kernels with the thresholds; utilize the smoothing kernels and the projections to produce projections smoothed in three dimensions in accordance with the thresholds such that a first threshold of the set of thresholds triggers smoothing in three dimensions and a second threshold of the set of thresholds does not trigger smoothing in three dimensions; and filter and backproject the projections to generate an image of the object."

The electronic translation of Kachelries is unclear. No combination of Li and Hsieh describes or suggests a computer storage medium as is recited in Claim 29. Specifically, no combination of Li and Hsieh describes or suggests utilizing smoothing kernels and projections to produce projections smoothed in three dimensions in accordance with thresholds such that a first threshold of the set of thresholds triggers smoothing in three dimensions and a second threshold of the set of thresholds does not trigger smoothing in three dimensions. Rather, in contrast to the presently claimed invention, Li merely describes an x-ray source that rotates about a center of rotation to

generate projection data, and Hsieh merely describes a filtering scheme that generates system information, obtains original projection data, determines a data characteristic of the original projection data, processes the original projection data responsive to the system information and the data characteristic so as to create filtered projection data, and calculates resulting projection data responsive to the filtered projection data. Accordingly, Claim 29 is submitted as being patentable over Li, Hsieh, and Kachelries.

Claims 33 and 34 depend from independent Claim 29. When the recitations of Claims 33 and 34 are considered in combination with the recitations of Claim 29, Applicants submit that dependent Claims 33 and 34 likewise are patentable over Li, Hsieh, and Kachelries.

For at least the reasons set forth above, Applicants respectfully request that the Section 103 rejection of Claims 1, 5, 6, 15, 19, 20, 29, 33, and 34 be withdrawn.

The rejection of Claims 2, 3, 16, 17, 30, and 31 under 35 U.S.C. § 103(a) as being unpatentable over Li in view of Hsieh is respectfully traversed.

Li and Hsieh are described above.

Claims 2 and 3 depend from Claim 1. As stated above, Claim 1 is submitted as being patentable over Li and Hsieh. When the recitations of Claims 2 and 3 are considered in combination with the recitations of Claim 1, Applicants submit that dependent Claims 2 and 3 likewise are patentable over Li and Hsieh.

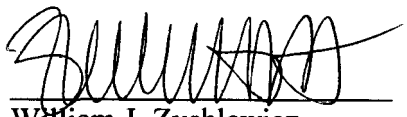
Claims 16 and 17 depend from Claim 15. As stated above, Claim 15 is submitted as being patentable over Li and Hsieh. When the recitations of Claims 16 and 17 are considered in combination with the recitations of Claim 15, Applicants submit that dependent Claims 16 and 17 likewise are patentable over Li and Hsieh.

Claims 30 and 31 depend from Claim 29. As stated above, Claim 29 is submitted as being patentable over Li and Hsieh. When the recitations of Claims 30 and 31 are considered in combination with the recitations of Claim 29, Applicants submit that dependent Claims 30 and 31 likewise are patentable over Li and Hsieh.

For at least the reasons set forth above, Applicants respectfully request that the Section 103 rejection of Claims 2, 3, 16, 17, 30, and 31 be withdrawn.

In view of the foregoing amendment and remarks, all of the claims now active in this application are believed to be in condition for allowance. Reconsideration and favorable action are respectfully solicited.

Respectfully Submitted,



William J. Zychlewicz
Registration No. 51,366
ARMSTRONG TEASDALE LLP
7700 Forsyth Blvd., Suite 1800
St. Louis, Missouri 63105
(314) 621-5070